

Claims

1. Planet carrier (2) for a gearbox comprising
 - a one-piece, step-shaped outer cup body (11), in which a similarly one-piece, step-shaped inner cup body (12) is inserted,
 - wherein the outer (11) and the inner cup bodies (12) each comprise a sleeve section (13, 14), which is connected at one end by a radially inwardly ring-shaped disk (15, 16) to a sleeve (17, 18), which transitions into a tubular projection (21, 22) via a radially inwardly extending base (19, 20),
 - wherein an outer diameter of the sleeve section (14), the sleeve (18), and the tubular projection (22) of the inner cup body (12) are adapted to corresponding inner diameters of the outer cup body (11),
 - wherein an axial extent of the sleeve section (14) of the inner cup body (12) is smaller than that of the sleeve section (13) of the outer cup body (11) and a sum of axial lengths of the sleeve section (14) and the sleeve (18) of the inner cup body (12) is greater than that of the sleeve section (13) of the outer cup body (11), so that the sleeve section (13, 14) of the outer (11) and inner cup bodies (12) are closed flush at the end when planet gears (4) are arranged between the ring-shaped disks (15 and 16), and
 - wherein recesses (33, 34) are arranged in the sleeve section (13) of the outer cup body (11) and the sleeve (18) of the inner cup body (12), wherein the planet gears (4) are guided radially through the recesses.
2. Planet carrier (2) for a gearbox comprising
 - a one-piece, step-shaped outer cup body (11), in which a similarly one-piece, step-shaped inner cup body (11) is inserted, wherein the inner (12) and the outer cup bodies (11) each comprise a ring-shaped disk (15, 16), on whose radially inner edge a sleeve (17, 18) is attached, which transitions into a tubular projection (21, 22) via a radially inwardly extending base (19, 20), wherein a sleeve section (13)

- extending axially away from the sleeve (17) is attached to a radially outer edge of the ring-shaped disk (15),
- wherein an outer diameter of the disk (16), the sleeve (18), and the tubular projection (22) of the inner cup body (12) are adapted to inner diameters of the sleeve section (13), the sleeve (17), and the tubular projection (21) of the outer cup body (11),
 - wherein the outer (11) and inner cup bodies (12) are configured and arranged axially one inside the other, such that the tubular projection (22) of the inner cup body (12) lies at least partially within the tubular projection (21) of the outer cup body (11), the sleeve (18) of the inner cup body (12) lies at least partially within the sleeve (17) of the outer cup body (11), and the ring-shaped disk (16) lies within the sleeve section (13), and
 - wherein recesses (33, 34) are arranged in the sleeve section (13) of the outer cup body (11) and the sleeve (18) of the inner cup body (12), wherein planet gears (4) installed between the disks (15 and 16) are guided radially through the recesses.
3. Planet carrier (2) for a gearbox according to claim 1, wherein the sleeve section (13) of the outer cup body (11) is provided with external teeth (25) for clutch or brake plates.
4. Planet carrier (2) for a gearbox according to claim 1, wherein the base (20) of the inner cup body (12) is provided with a ring-shaped, groove-like receptacle (23), in which a thrust bearing (24) is installed.
5. Planet carrier (2) for a gearbox according to claim 1, wherein the outer cup body (11) is produced through non-cutting shaping of a steel sheet.
6. Planet carrier (2) for a gearbox according to claim 1, wherein the inner cup body (12) is produced through non-cutting shaping of a steel sheet.

7. Planet carrier (2) for a gearbox according to claim 1, wherein aligned bore holes (30) are arranged in the ring-shaped disks (15, 16) of the outer cup body (11) and inner cup body (12) for holding pins (32), on which the planet gears (4) are mounted.
8. Planet carrier (2) for a gearbox according to claim 1, wherein the sleeve sections (13, 14) of the outer (11) and inner cup body (12) are connected with a frictional fit in an overlapping area.
9. Planet carrier (2) for a gearbox according to claim 2, wherein the sleeve section (13) of the outer cup body (11) is connected with a positive fit to the ring-shaped disk (16) of the inner cup body (12).
10. Planet carrier (2) for a gearbox according to claim 1, wherein the sleeve sections (13, 14) of the outer (11) and inner cup body (12) are connected to each other at one end with a ring-shaped weld.
11. Planet carrier (2) for a gearbox according to claim 1, wherein the sleeve sections (13, 14) are respectively provided on one end with a flange and are welded to each other in a peripheral direction in an area of the flange.
12. Planet carrier (2) for a gearbox according to claim 2, wherein the ring-shaped disk (16) of the inner cup body (12) is connected to the sleeve section (13) of the outer cup body (11) with a ring-shaped weld.
13. Planet carrier (2) for a gearbox according to claim 10, wherein the weld between the outer and inner cup bodies is a laser weld.
14. Planet carrier (2) for a gearbox according to claim 1, wherein the sleeve section (13) of the outer cup body (11) and the sleeve section (14) of the inner cup body (12) are provided with a positive fit shape to engage one another.

15. Planet carrier (2) for a gearbox according to claim 14, wherein the positive-fit shape is formed by internal teeth (26) in the sleeve section (13) of the outer cup body (11) and first teeth (27) in the sleeve section (14) of the inner cup body (12).

16. Planet carrier (2) for a gearbox according to claim 2, wherein the sleeve section (13) of the outer cup body (11) and the ring-shaped disk (16) of the inner cup body (12) are provided with a positive-fit shape to engage one another.

17. Planet carrier (2) for a gearbox according to claim 16, wherein the positive-fit shape is formed by internal teeth (26) in the sleeve section (13) of the outer cup body (11) and second teeth (28) on the ring-shaped disk (16) of the inner cup body (12).

18. Planet carrier (2) for a gearbox according to claim 1, wherein the outer (11) and inner cup bodies (12) are produced from case hardened steel and an inner ring of a rolling bearing or free-wheel, provided as a hardened angled sleeve (31), overlaps the sleeve (17) of the outer cup body (11) and the two parts are connected with a positive or frictional fit.

19. Planet carrier (2) for a gearbox according to claim 1, wherein an inner surface of the tubular projection (22) of the inner cup body (12) is provided with serrated teeth (35).